

Rectangle: $= bh$
 Parallelogram: $= bh$
 Square: $= s^2$
 Triangle: $= \frac{1}{2} bh$
 Trapezoid: $= \frac{1}{2} h(b_1 + b_2)$
 Rhombus: $= \frac{1}{2} d_1 \cdot d_2$
 Circle: $= \pi r^2$
 Reg. Polygon: $= \frac{1}{2} ap$
 Sector: $= \frac{N}{360} \pi r^2$

Name _____

Date _____

Area Review worksheet 202

Figures may not be drawn to scale. Do not forget to include units.

1. If the area of rectangle ABCD = 450cm^2 , and $AD = 12.5\text{cm}$, find DC.



$$450 = 12.5 \cdot b$$

$$b = 36\text{cm} = DC$$

2. In rectangle ABCD, $BC = 8\text{mm}$, $BD = 16\text{mm}$. Find the area.



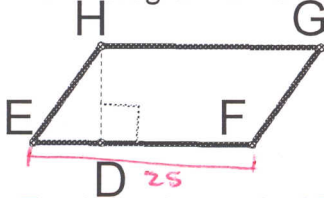
$$16^2 = 8^2 + DC^2$$

$$A = 8 \cdot 8\sqrt{3}$$

$$8\sqrt{3} = DC$$

$$64\sqrt{3}\text{mm}^2$$

3. Parallelogram EFGH. $EF = 25\text{cm}$, Area = 250cm^2 , find HD.



$$250 = 25h$$

$$10\text{cm} = h$$

4. Equilateral triangle ABC. $AC = 2\text{cm}$. Find the area.

$$A = \frac{2^2\sqrt{3}}{4} = \sqrt{3}\text{cm}^2$$

Use the rhombus to the right for #s 5 -9

5. $m\angle EPA = 90^\circ$

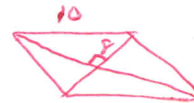
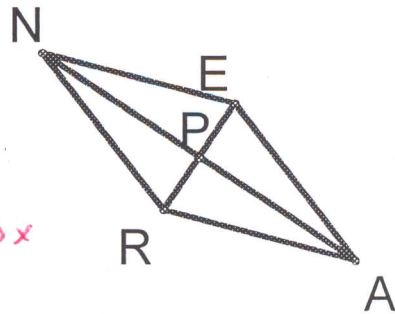
6. $NA = 16$; $RE = 20$; Area = 160u^2 $\frac{1}{2} 16 \cdot 20$

7. $NA = 20$; Area = 180 ; $RE = 18\text{u}$ $180 = \frac{1}{2} 20 \times$

8. $NA = 5$; $RP = 6$; Area = 30u^2 $A = \frac{1}{2} 5 \cdot 12$

9. $NE = 10$; $RE = 16$; $NP = 6$; Area = 96u^2

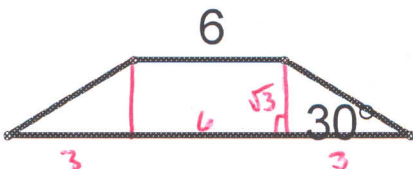
10. Given the isosceles trapezoid. Area = $9\sqrt{3}\text{u}^2$



$$10^2 = 8^2 + NP^2$$

$$6 = NP$$

$$A = \frac{1}{2} 16 \cdot 12$$

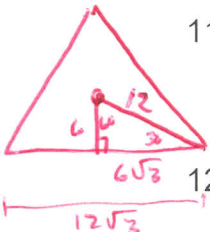


$$\frac{30}{13} \mid \frac{60}{3} \mid \frac{90}{3}$$

$$A = \frac{1}{2} \sqrt{3} (6 + 12)$$

12

11. Equilateral triangle with a radius of 12. Area = $108\sqrt{3}\text{u}^2$



$$\frac{30}{2} \mid \frac{60}{6\sqrt{3}} \mid \frac{90}{12}$$

$$\frac{1}{2} 6 \cdot 36\sqrt{3}$$

12. Equilateral triangle with one side of 24. Area = $144\sqrt{3}\text{u}^2$

$$\frac{24^2\sqrt{3}}{4}$$

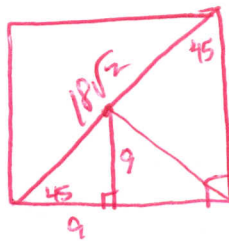
13. The diagonal of a square is $18\sqrt{2}$.

One side = $18u$

Apothem = $9u$

Perimeter = $72u$

Area = $324u^2$



14. The perimeter of a regular hexagon is $12\sqrt{3}$. Find the area.



$$\begin{array}{r|rr} 30 & 60 & 90 \\ \hline 13 & 3 & 2\sqrt{3} \end{array}$$

$$\frac{1}{2} \cdot 3 \cdot 12\sqrt{3} = 18\sqrt{3}u^2$$

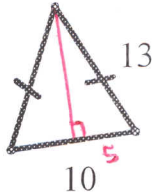
15. Find the area of the triangle.

$$13^2 = 5^2 + n^2$$

$$12 = n$$

$$A = \frac{1}{2} \cdot 12 \cdot 10$$

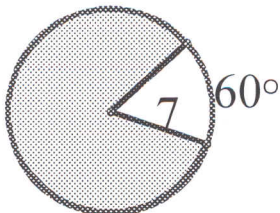
$$60u^2$$



For #s 16-20, find the **probability** that a point chosen at random would lie in the shaded region.

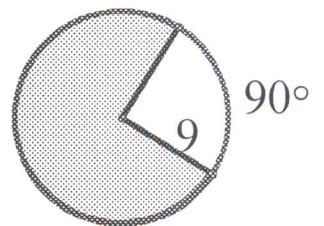
16. $.83$

$$P = \frac{300}{360}$$



17. $.75$

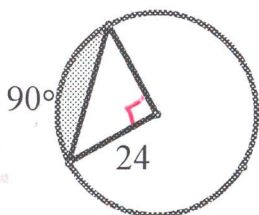
$$P = \frac{270}{360}$$



18. $.09$

19. $.20$

20. $.03$

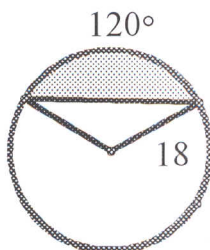


$A_{\text{sector}} - A_{\Delta}$

$$\frac{90}{360} \cdot 24^2 \pi - \frac{1}{2} \cdot 24 \cdot 24$$

$$452.4 - 288$$

$$P = \frac{164.4}{(24^2 \pi)} = .09$$



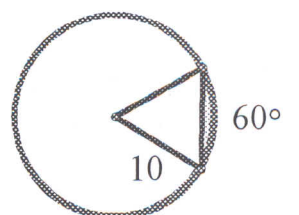
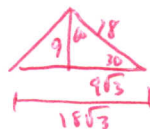
$A_{\text{sector}} - A_{\Delta}$

$$\frac{120}{360} \cdot 18^2 \pi - \frac{1}{2} \cdot 9 \cdot 18\sqrt{3}$$

$$339.3 - 140.3$$

$$P = \frac{198.99}{18^2 \pi}$$

$$= .20$$



$A_{\text{sector}} - A_{\Delta}$

$$\frac{60}{360} \cdot 100 \pi - \frac{10^2 \sqrt{3}}{4}$$

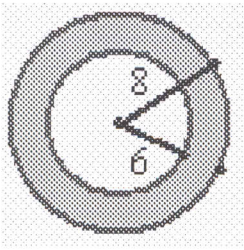
$$P = \frac{9.06}{(100 \pi)} = .03$$

Find the area of the shaded region.

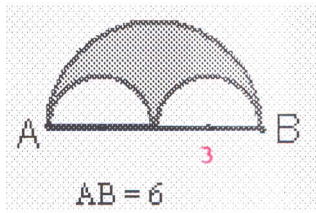
21. $88.0\pi^2$

22. $7.1\pi^2$

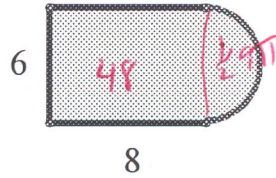
23. $62.1\pi^2$



$64\pi - 36\pi$
 28π



$\frac{1}{2}9\pi - (1.5)^2\pi$



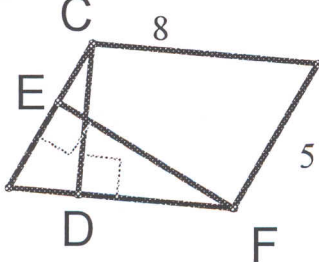
$48 + \frac{1}{2}9\pi$

Find the **area**, and then find the **indicated length**.

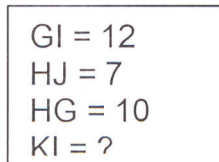
24. $A = 32\pi^2$ $EF = 6.4$

25. $A = 42\pi^2$ $KI = 8.4\pi$

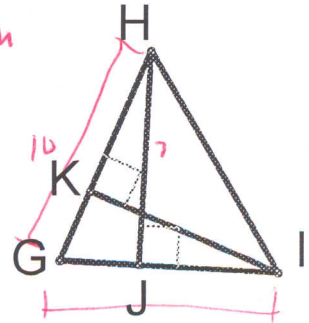
$EF = ?$



$CD = 4$



$A = \frac{1}{2}7 \cdot 12$
 42



$42 = \frac{1}{2}10 \cdot KI$
 $84 = KI$

Find the area of the given regular polygon.

26. 695.3cm^2

27. $247.7\pi^2$

Octagon
 $P = 96\text{cm}$

Pentagon
side = 12

$A = \frac{1}{2}14.5(96)$

$\tan 36 = \frac{6}{a}$
 $a = 8.3$

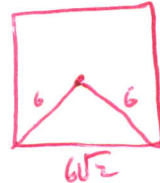
$A = \frac{1}{2}8.3(60)$



28. $72\pi^2$

Square
 $r = 6$

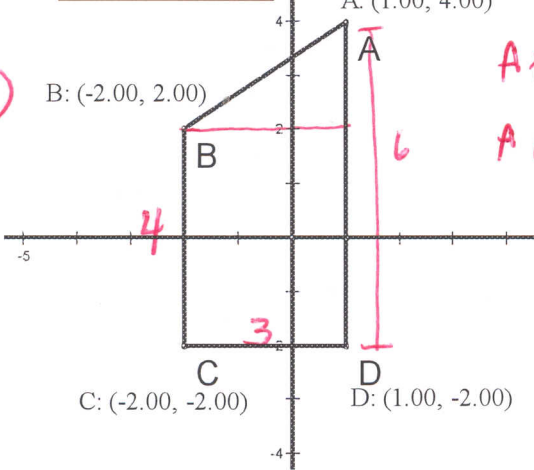
$A = (6\sqrt{2})^2$
 72



Find the area of the figure.

29. $15\pi^2$

30. $29\pi^2$



$A_{\text{trap}} = \frac{1}{2}4(7+6) = 26$

$A_{\Delta} = \frac{1}{2}6 \cdot 1 = 3$

